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ABSTRACT

This document presents guidelines developed by the Association of Computer-Based Systems for Career Information (ACSCI) for integrating computer-based career information systems into the larger guidance or career development program. This guide is intended for counselors and others who assist students and clients at a user site. For purposes of the guidelines, user site personnel are grouped into three categories by their required level of knowledge about the system: the counseling and information staff need the most knowledge; followed by incidental staff users; and finally by administrators, students, and clients. It is recommended that these guidelines be used to: (1) facilitate a computer-based system's implementation and use; (2) aid in assessing system effectiveness; and (3) assure that resources devoted to the system are invested under guidelines that insure their most efficient and effective use. The guidelines are organized into seven main headings with three to six guidelines under each heading. The categories include theory and practice, process, user needs, system site management, physical environment, personnel, and evaluation. Most guidelines are followed by questions designed to test the extent to which those guidelines are being observed. (NRB)

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Association of Computer-Based Systems for Career Information

Guidelines for the Use of Computer-Based Career Information and Guidance Systems

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Preface

As with all tools, the effectiveness of computer-based career information and/or guidance systems depends on the quality of the product. Since adherence to professional standards offers the best assurance of quality, ACSCI has put major effort into developing, refining, and disseminating its *Handbook of Standards for Computer-Based Career Information Systems*. These standards have become the accepted guide to quality for developers and operators of such systems. The standards also help the agencies that use these systems assess their quality.

The effectiveness of these systems also depends, however, on the way they are used in a given setting. Effective use is largely a responsibility of the counselors and others who assist students and clients at a user site. The guidelines in this publication are intended to help these "mediators" achieve the best possible implementation and utilization of a computer-based career information and/or guidance system. The guidelines provide criteria for installing a system in a setting and for evaluating the operation of a facility having a system in place. Just as ACSCI's *Handbook of Standards* serves to define quality in the product of a computer-based system, the guidelines presented here help define quality in the use of the system.

ACSCI assigned development of these guidelines to its Technical Assistance and Training Committee. As co-chairs of that committee, we drew on our ten-year experience in extending the services of the Wisconsin Career Information System to more than 500 sites. Without the assistance of others, however, we could not have done the job. We wish to acknowledge with gratitude the important contributions of the following individuals:

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Introduction

Any computer-based career information and/or guidance system is most effective when its use is fully integrated with the counseling and guidance or career-development program which it serves. The guidelines presented in this publication promote such integration and foster the most effective and efficient use, in a wide variety of settings, of this important tool.

People are crucial to the good use of a computer-based system. They are essential to the total integration of the system with related activities at the site and external to the site. User site personnel, however, have need for different levels of knowledge about the system, commensurate with their roles in using it. For purposes of the guidelines presented in the following sections, user site personnel can be grouped into three categories defined by their required level of knowledge about the system:

1. Counseling and Information Staff
Level of Knowledge: Facilitation

This group includes all counselors in a school or college counseling department, all librarians in a reference department, all job service counselors in job service agencies, all rehabilitation counselors in vocational rehabilitation facilities, and any other counselors involved in direct contact with students or clients. Information assistants, such as school aides and library clerks, may be included. The "facilitation" level of knowledge includes hands-on application, search experience, and understanding the use of all aspects of the computer-based system.

In addition, at each user site there is a key staff member who coordinates the use of the system at that site. This "site coordinator" requires the same "facilitation" level of knowledge but has the added responsibility of maintaining contact with system operator personnel to provide feedback on system usage, to report any related problems, and to be aware of pending system changes.

2. Incidental Staff Users
Level of Knowledge: Orientation

This group includes teachers in a social studies department, parent volunteers, librarians in a circulation department, administrative or clerical staff in a job service agency, and others who may assist students or clients. The "orientation" level of knowledge includes hands-on experience with the use of selected aspects of the computer-based system.

3. Administrators, Students, Clients, and Others
Level of Knowledge: Awareness

Examples of this diverse group include the principal of a high school, faculty at a college, parents of student users, and users (students or clients). The "awareness" level of knowledge consists of knowing the purpose of the system, where it is located, and how to access it.

Guidelines for the Use of Computer-Based Career Information and Guidance Systems provides a voluntary means for schools and agencies using these systems to declare that they subscribe to nationally recognized standards of quality in their use. This publication also provides a model for self-assessment that can be used in periodic reviews of the delivery of service. Ultimately, such self-assessment combined with regular interaction with system operators leads to improved products.

In summary, ACSCI encourages the use of the guidelines in this publication for three purposes:

- To provide assistance in the implementation and utilization of a computer-based system, in order to maximize benefits for the students and clients who are the end users.

- To provide assistance in assessing the effectiveness of the implementation and utilization of a computer-based system.

- To assure constituencies and the general public that resources devoted to computer-based systems are invested under guidelines that insure their most efficient and effective use.

The guidelines are grouped under seven headings and numbered accordingly, from 1.1 to 7.3. The questions that follow most of the numbered statements are designed to test the extent to which those guidelines are being observed.

Theory and Practice

Computer-based career information and guidance systems reflect various career-development theories. From these theories, certain goals for the use of the systems can be derived. Goals that can be achieved through the use of a particular system should be compatible with the career-development goals of the user site. The following guidelines should apply:

GUIDELINE 1.1: **Each user site should adopt, adapt, or otherwise define its theory of career development.**

- How does the career-choice process fit into a student's or client's life?
- What are the steps in career decision-making?
- What are the characteristics of a vocationally mature student or client?

GUIDELINE 1.2: **Each user site should define a plan to facilitate the career-development process which will meet the needs of its students or clients.**

- At what point in their life/career development are most students or clients?
- At what point in the career-choice process are most students or clients when they are likely to use the system? What are the major variations?
- What special needs do students or clients have that should be met by the user site? What is the plan to meet these special needs?

GUIDELINE 1.3: **The goals of the computer-based system should be compatible with the theory to which the user site subscribes.**

- What are the goals of the computer-based system?
- How do these system goals fit into the goals of the user site?
- Are there areas of conflict and how will they be resolved?

GUIDELINE 1.4: **The process and content of the computer-based system should fit into the career-development plan of the user site.**

- Which steps in the career-development process are satisfied by the computer-based system?
- Which steps are only partially met by the computer-based system and require further staff attention? Will this help be available?
- How will the computer-based system be integrated into the non-computer part of the career-planning process?

Process

Each user site should integrate use of the computer-based system into ongoing activities. The following guidelines should apply:

GUIDELINE 2.1: **Each user site should develop program goals for integrating use of the computer-based system into existing programs to meet student or client needs.**

- Do your goals adequately meet the needs of each student or client population?
- Are the goals realistic for your school or agency?
- Does the management support these goals? Are they consistent with the philosophy of the administrators?
- Do staff support these goals?

GUIDELINE 2.2: **Each user site should develop objectives to implement each of the goals.**

- Does each objective have a specified time frame?
- Are the objectives measurable?
- Can these objectives be achieved?
- Can expected student/client outcomes be identified?
- Are these objectives shared by staff?

GUIDELINE 2.3: **Each user site should develop a variety of activities to implement each of the objectives.**

- Do the activities carry out the objectives?
- Do the activities take into consideration the age and abilities of the target population?
- Are the activities implemented throughout the school or department?
- Are time, cost, and physical facilities provided for?
- Have all staff been appropriately trained to implement these activities?
- Is a key staff member (the site coordinator) responsible for carrying out each of these activities?

GUIDELINE 2.4: **The management team should recognize the importance of career planning in the context of the entire program and should monitor and evaluate its progress.**

- Is a key staff member responsible for this program?
- Are the funds and facilities adequate?
- Is the system readily accessible?
- Is regular maintenance provided?

GUIDELINE 2.5: **Any student or client should be oriented to the system prior to usage and should be given follow-up assistance after use.**

- Does this individual need to use the system?
- What portions of the system should be used by this individual?
- What outcomes are expected from this individual's use of the system?
- What other resources would be of help to this user? In what ways is the user directed to them?

User Needs

It is important to identify the variety of student or client needs so that staff can determine which needs can best be met by the computer-based system and which needs require other types of intervention. The following guidelines should apply:

GUIDELINE 3.1: **Agencies should identify client populations.**

- Which major groups are to be served?
- How do they differ?

GUIDELINE 3.2: **The career-planning needs of each client population should be determined.**

- What are the career-planning needs of each group?
- What personal resources do students or clients have for meeting their own needs? What do they need, and can they supply it themselves?
- What barriers do they face?

GUIDELINE 3.3: **The career-planning needs of students or clients should be met by the counseling program by using the computer-based system as an integral tool.**

- For each need, is it met by the computer-based system?
- For each need, will a counselor or aide assist to assure that the user's need is met?
- For each need, if it is not met by the computer-based system and staff, what other resources will be used to meet the need?

System Site Management

Site management of a computer-based system is critical to its effective use. A management plan for administration and staffing at the local site should be developed and reviewed annually. The management plan should cover all aspects of system use: access, long-term commitment of resources, physical environment, staff, integration into the total program, public relations, and evaluation. The plan must begin with obtaining sufficient resources to operate and maintain the system over a number of years. The following guidelines should be considered in developing the plan:

GUIDELINE 4.1: **All students or clients should have an opportunity to use the system.**

- Is the system regularly available during enough working hours to meet the needs of users?
- Are trained staff available to help individuals in making efficient use of the system?
- Have schedules been developed to facilitate efficient and equitable access to the system, based on the needs of the target population and the equipment available?

GUIDELINE 4.2: **The organization should make a long-term commitment to providing the system's service by including in the annual budget adequate funds to handle staff, system fees, hardware, and necessary supplies.**

- Are resources sufficient to cover such needs as paper, user materials, subscriber fees, and telephone lines (if required)?
- Are resources sufficient to cover purchase and maintenance of equipment, as well as acquisition and maintenance of facilities?
- Are resources sufficient to provide staff with training and in-service opportunities, including expansion and new applications?

GUIDELINE 4.3: **Site management should be involved in the evaluation of the system.**

- Is system use reviewed, using criteria such as numbers of users, value to clients, accessibility, and usefulness of information?

GUIDELINE 4.4: **Site management should be involved with promotional activities at the site and in the local community.**

- Is information on system availability shared with the general community, the professional community, the business community, labor, and specific target groups such as the handicapped and the economically disadvantaged?
- Is the system promoted through local news media?
- Is staff available to inform business groups, service clubs, and other community organizations of the system's use, functions, and availability?
- Do key staff members keep clients and colleagues informed regarding system use, functions, and availability?

GUIDELINE 4.5: **The system should be regularly updated, based on releases from the system operator.**

- Does site management keep the system operator informed of key personnel changes?
- Is there an established procedure for the site coordinator to inform the system operator of problems with the system or suggestions for changes?
- Are there procedures for users to inform the site coordinator of problems with the system or site service?
- Are outdated materials destroyed or returned to the system operator to assure that only the most up-to-date material is available to users?

GUIDELINE 4.6: **Management should insure that site coordinators receive periodic training from the system operator and that all staff receive "in-house" training in use of the system each year.**

- Are there adequate budget and release time to allow site coordinators to attend training provided by the system operator at least once per year?
- Are new staff trained in using the system within a reasonable time of being hired?
- Are continuing staff regularly updated on system changes when they occur, and are they provided training opportunities?

Physical Environment

The physical environment of the user site has an important role in the effective use of a computer-based system. Equipment must be readily accessible and available to the user, otherwise the system may not be used to the fullest extent possible. The following guidelines should apply:

GUIDELINE 5.1: **The facilities should have ample and accessible space.**

- Is the space adequate in terms of such features as comfort, temperature level, non-glare lighting, electrical outlets, telephone lines, minimal noise and distraction, privacy when needed, and unobtrusive printing capability?
- Is the space open when the client or student is available? Is the space easily identifiable, with good directions?

GUIDELINE 5.2: **The availability of computer equipment is essential to the use made of computer-based systems.**

- Is the equipment in working order, and are there annual maintenance checkups?
- Is there sufficient, workable hardware to serve the needs of clients or students, including those with special needs?
- Is the equipment easily accessible to all staff and to all potential users?
- Is the equipment accompanied by adequate instructions on use, appropriate user materials, and instructions on repair and technical assistance?
- Does the equipment complement the needs of the site—that is, does it have a permanently accessible place within the office or classroom, or does it take advantage of portable options?
- Does the microcomputer or computer terminal have printing capability?
- Does equipment acquisition, maintenance, and repair keep up with technical advances?
- Is the equipment placed in high-traffic areas such as the counseling center, library, and other areas where clients or students are served directly?

Personnel

Depending on their roles in using the system, site personnel have need for different levels of knowledge about the system (see Introduction). There is also need for at least one site coordinator who has both a "facilitation" level of knowledge and special insights derived from the system operator regarding nuances of information interpretation, idiosyncrasies of access and usage, and future system design plans. Guidelines by level of training and role are as follows:

GUIDELINE 6.1: **Staff who are regularly involved with using the system should have thorough knowledge of its operation, theoretical process, and practical interpretation (a "facilitation" level of knowledge).**

- Do staff members know how the system operates, how the system can be used to retrieve information to meet student or client needs, how to help users interpret the results, and how the system interacts with other information sources?
- Have all staff members participated in initial training sessions that include hands-on practice during the session and practice time after completion of training?
- Do staff members attend periodic follow-up sessions—whether presented in-house or by system operators—on advanced techniques, new system protocols, and updates?

GUIDELINE 6.2: **Each site should have at least one site coordinator. This person must have a special knowledge of the system through training offered by the system operator and needs to maintain a liaison contact with the system operator.**

- Has one or, in a large facility, more than one staff member been assigned the role of site coordinator?
- Does the site coordinator keep up-to-date on the system and regularly attend training sessions offered by the system operator?
- Does the site coordinator serve as an effective liaison person with the system operator, bringing any problems or concerns about the system to the operator's attention?
- Does the site coordinator keep other staff up-to-date on the system and track its usage within the site?

GUIDELINE 6.3: **Staff members should develop a process for identifying (and communicating or interacting with) related activities sponsored by other organizations. (Examples: Career Days, College Fairs, College Representative Visitations.)**

GUIDELINE 6.4: **Staff members should conduct in-house training and educational seminars for people needing "orientation" and "awareness" levels of knowledge, and for the end users of the system.**

GUIDELINE 6.5: **Incidental staff users need an "orientation" level of knowledge that can be obtained through annual updates.**

- Have incidental staff users seen a demonstration of the total system? Have they had hands-on experience with the component of the system they are most likely to use? (Training of "orientation" level groups is typically done in-house by local staff members but may be supported by the system operator.)
- Are they sufficiently aware of local system access procedures so they can access the system independently?

GUIDELINE 6.6: **Administrators, students or clients, and others should have an "awareness" level of knowledge about the system that can be obtained through a yearly demonstration.**

- Have they seen a demonstration of access and data from at least one file? (Training for the "awareness" level is usually done by local staff members but may have the support of the system operator.)
- Are they aware of local access procedures and scheduling?
- Do administrators and other staff understand what information needs they can refer to staff members and the system?

Evaluation

Continuous evaluation and systematic review of needs, goals, and achievements are important. Systems change, needs of users change, and program goals change. The following guidelines should apply:

GUIDELINE 7.1: **Objective measurement techniques should be used to provide quantitative data about use of the system. Such measurements may include number of uses of various components of the system, number and types of users, percentage of target population reached, and time-of-day usage patterns.**

GUIDELINE 7.2: **Subjective indicators of usage should be obtained at least every other year by surveys of end users and staff members.**

- Does the computer-based system meet program goals? If not, should the program goals be modified?
- Have the program objectives been met? What further actions should be taken?
- Are staff members capable of performing to the standards described in the guidelines presented in this publication?
- Are the needs of users being met?
- Is the physical environment adequate?
- Is the site management effective?
- Has the system been successfully implemented?
- Is the system—especially its content, accessing strategies, and reliability—meeting the need?
- Have the most recent improvements to the system been implemented? Have outdated materials been destroyed or deleted?

GUIDELINE 7.3: **Evaluation information should be reported to site facilitators, administrators, the system operator, and other interested parties.**

About the Editors

Roger Lambert is the director of the Wisconsin Career Information System, having served in that capacity since the system's inception in 1975. He also serves as the associate director of the Vocational Studies Center at the University of Wisconsin—Madison. He has been involved in a variety of research and development activities over the past 15 years related to career development and computer-based information systems and has served as president of ACSCI.

David Caulum is the coordinator of the Wisconsin Career Information System. He was involved in the early development of the Wisconsin system and has over the years been instrumental in the development and utilization of the microcomputer for delivery of career information. He has also chaired the Research Committee and the Technical Assistance and Training Committee of ACSCI. In 1984 he was recognized by ACSCI for his outstanding contribution to the development of computerized career information systems.

The Association of Computer-Based Systems for Career Information (ACSCI) is a professional organization for the advancement of career information. Formed in 1978, the Association and its members work to advance the development and use of career information, information technology, and services to users through standards, training, public information, and technical assistance. Full members are organizations that operate computer-based systems for career information in states and metropolitan areas. Supporting members include developers and vendors of software and hardware used in delivering career information. Individual members include researchers, administrators, counselors, and others who are interested in the field of career information. Inquiries about membership may be sent to the ACSCI Clearinghouse, 1787 Agate Street, Eugene, OR 97403.